

REMARKS/ARGUMENTS

The continuation application is filed to more fully claim the invention disclosed in the original application filed July 20, 2001. Applicants respectfully request the Examiner to allow all of the pending claims in view of the remarks set forth below.

In the first Office Action of the parent case, the Examiner rejected the claims under 35 U.S.C. § 103(a) as being obvious over European Patent Application Publication EP 0 732 868 A1 by Nagayama et al. ("*Nagayama*") in view of U.S. Patent Application Publication US 2001/0019133 A1 by Konuma ("*Konuma*").

Applicants submit that the combination of the cited references does not disclose or suggest the light-emitting device in claim 24. More specifically, Applicants submit that the combination of the cited references does not disclose or suggest a "poly-siloxane insulating structure separating the electro-luminescent organic layer into a plurality of light-emitting elements" and that the "the electro-luminescent organic layer is deposited from solution using wet-chemical techniques". As explained at, for example, column 10, lines 9-58, *Nagayama* discloses a bank structure that is used when the organic material is deposited using vacuum deposition techniques rather than when the organic material is deposited from solution. In *Nagayama*, the organic material is evaporated through the openings onto the exposed portion of the first electrode between the ramparts. See column 10, lines 13-17. In *Nagayama*, the bank structure (i.e., the ramparts 7 with the overhanging portion 7a) is shaped so that the organic material and thereafter a second electrode material can be evaporated onto the first electrode while minimizing the likelihood of a short circuit due to contact between the first electrode and the second electrode. *Konuma* discloses embedding an insulator (i.e., element 41b) between the pixel electrode (i.e., element 40) and the electroluminescent layer (i.e., element 42) in order to prevent a short circuit between the pixel electrode and the cathode (i.e., element 43). This protective portion, however, is not a structure that separates the electroluminescent layer into multiple light emitting elements (e.g., the protective portion is not a bank structure). Therefore, the combination of the cited references does not disclose or suggest a "poly-siloxane insulating structure separating the electro-luminescent organic layer into a plurality of light-emitting elements" and that the "the electro-luminescent organic layer is deposited from solution using wet-chemical techniques."

In *Nagayama*, the ramparts are made of non-photosensitive polyimide. See column 8, lines 28-32. It would not be obvious to substitute polyimide with poly-siloxane. As stated

at, for example, page 12, paragraph [0032] of Applicant's specification, when organic material is deposited from solution, there are many advantages to having the bank structure made from poly-siloxane rather than polyimide. Poly-siloxane has a non-wetting behavior while polyimide has a wetting behavior and so one advantage of using poly-siloxane is that its non-wetting behavior prevents the organic material from clinging to the sides of the bank thus allowing the resulting organic layer to be flatter. *See, e.g.*, the last sentence of paragraph [0032].

In addition, the Applicants respectfully submit that the Examiner has not provided a suggestion to combine *Nagayama* and *Konuma*. The Examiner has the burden of showing that the cited references provide a suggestion to combine them. *See* MPEP 2142. There is no such motivation to combine the cited references. The polyimide layer (i.e., the bank structure) in *Nagayama* is used to electrically separate pixels. In *Konuma*, the insulating layer (i.e., elements 39 and 41b) is used for different purposes. In *Konuma*, the interlayer insulating film (element 39) is used to separate the thin-film transistor ("TFT") from the OLED. The protection portion (element 41b) is used to separate the pixel electrode from the electroluminescent layer to prevent electrical shorts. Neither element 39 nor element 41b are bank structures. When separating pixels, characteristics of the bank structure such as its wetting behavior (e.g., whether the insulating layer is hydrophilic and thus tends to spread the organic material or whether the layer is hydrophobic and tends to contain the organic material) and curing temperature (e.g., whether the curing temperature of the insulating layer is compatible with the organic materials) are considered. On the other hand, the requirements for the insulating layer used to separate the TFT from the OLED or to separate the electrode from the electroluminescent layer are less stringent and the wetting behavior and curing temperature are not a determinative factor and thus the types of insulating layers available for use in these areas are greater. Therefore, since the insulating layers used in *Konuma* do not take into consideration the characteristics considered when forming bank structures as in *Nagayama*, no motivation is provided in these references to combine them.

For at least these reasons, Applicants respectfully request reconsideration and allowance of claim 24. Claims 25-30 depend from claim 24. Accordingly, they are patentable over the combination of the cited references at least for the reasons set forth above with respect to claim 24.

Claim 31 recites "forming on the first electrode layer a poly-siloxane bank structure having apertures" and "depositing from solution using wet-chemical techniques one or more

organic layers into the apertures of the poly-siloxane bank structure”, and for reasons similar to those provided for claim 24, the combination of the cited references does not render claim 31 obvious.

Claims 32-40 depend from claim 31. Accordingly, they are patentable over the combination of the cited references at least for the reasons applicable to claim 24.

Claim 41 recites “at least one structure comprising poly-siloxane material, wherein the structure is configured to separate elements of the OLED” and “wherein the electro-luminescent layer is formed by depositing solution using wet-chemical techniques”, and for reasons similar to those provided for claim 24, the combination of the cited references does not render claim 41 obvious.

Claims 42-49 depend from claim 41. Accordingly, they are patentable over the combination of the cited references at least for the reasons applicable to claim 41.

Conclusion:

This preliminary amendment modifies the application to indicate that it is a continuation and adds new claims to more fully claim the invention disclosed in the original application filed on July 20, 2001.

If the Examiner feels that a telephone conference would advance prosecution of this application in any manner, the undersigned attorney for Applicants stands ready to conduct such a conference call at the convenience of the Examiner.

The Commissioner is hereby authorized to charge any fees that may be required, or credit any overpayment to Deposit Account No. 19-2179.

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Respectfully requested,

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Attachment

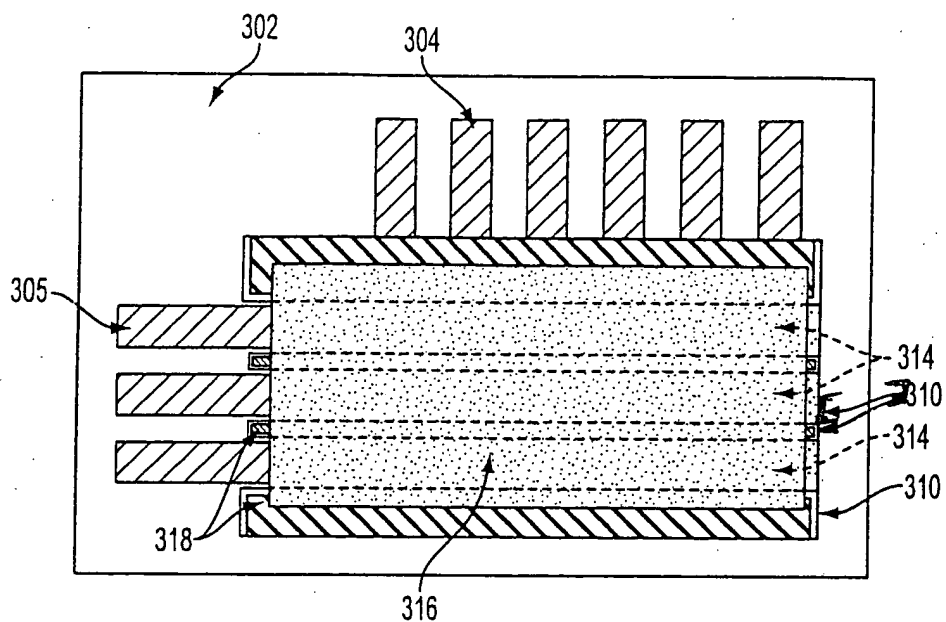


FIG. 3C

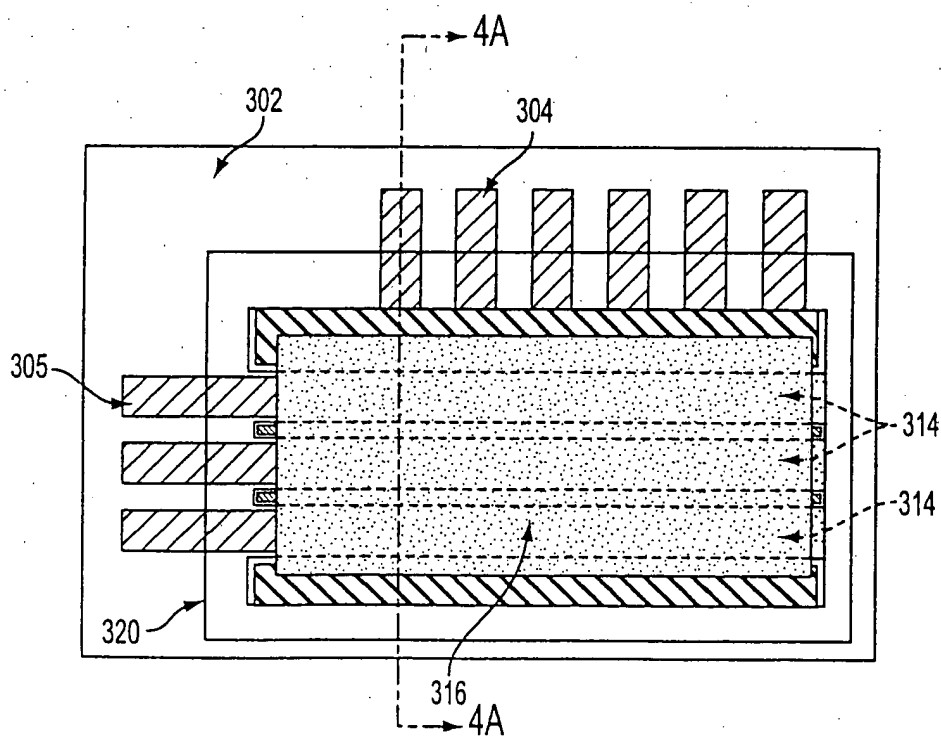


FIG. 3D